FIG. 1

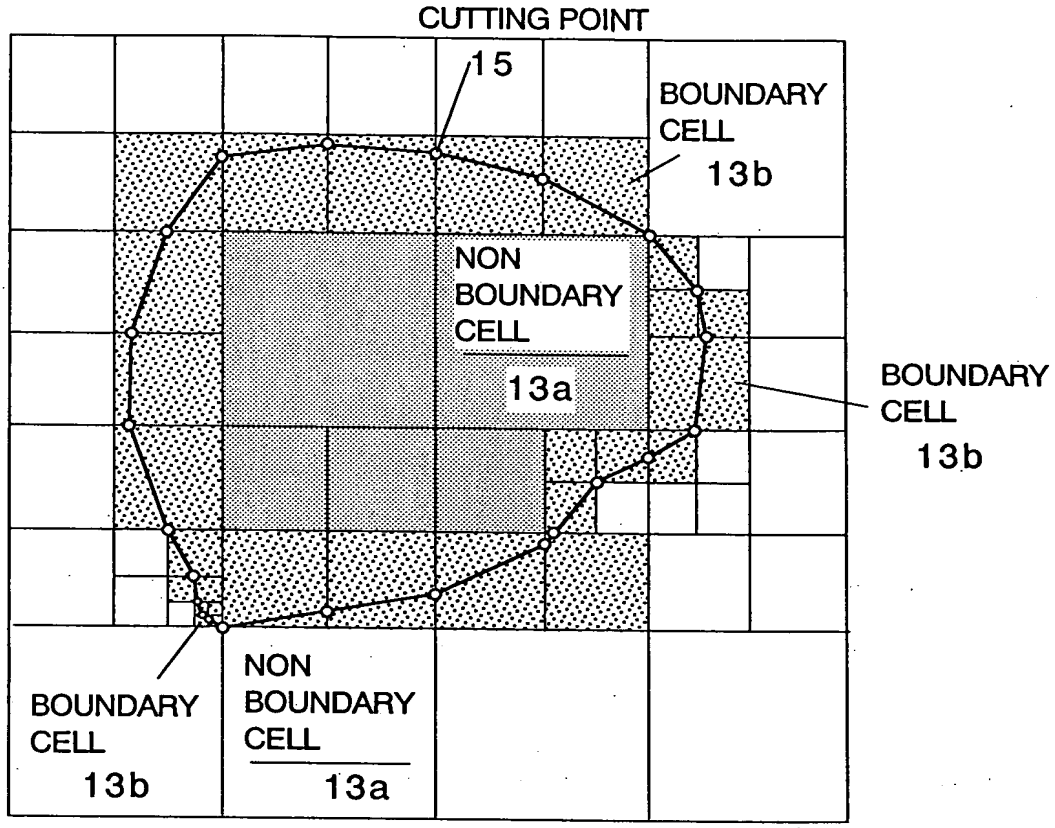
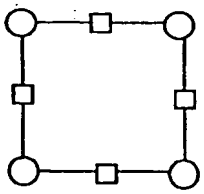
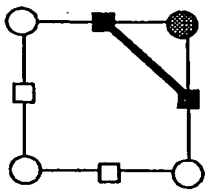


FIG. 2a
PRIOR ART



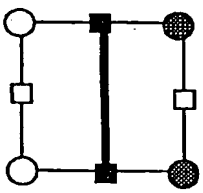
mc-0

FIG. 2b
PRIOR ART



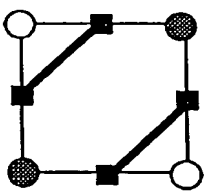
mc-1

FIG. 2c
PRIOR ART



mc-2

FIG. 2d
PRIOR ART



mc-3

BEST AVAILABLE COPY

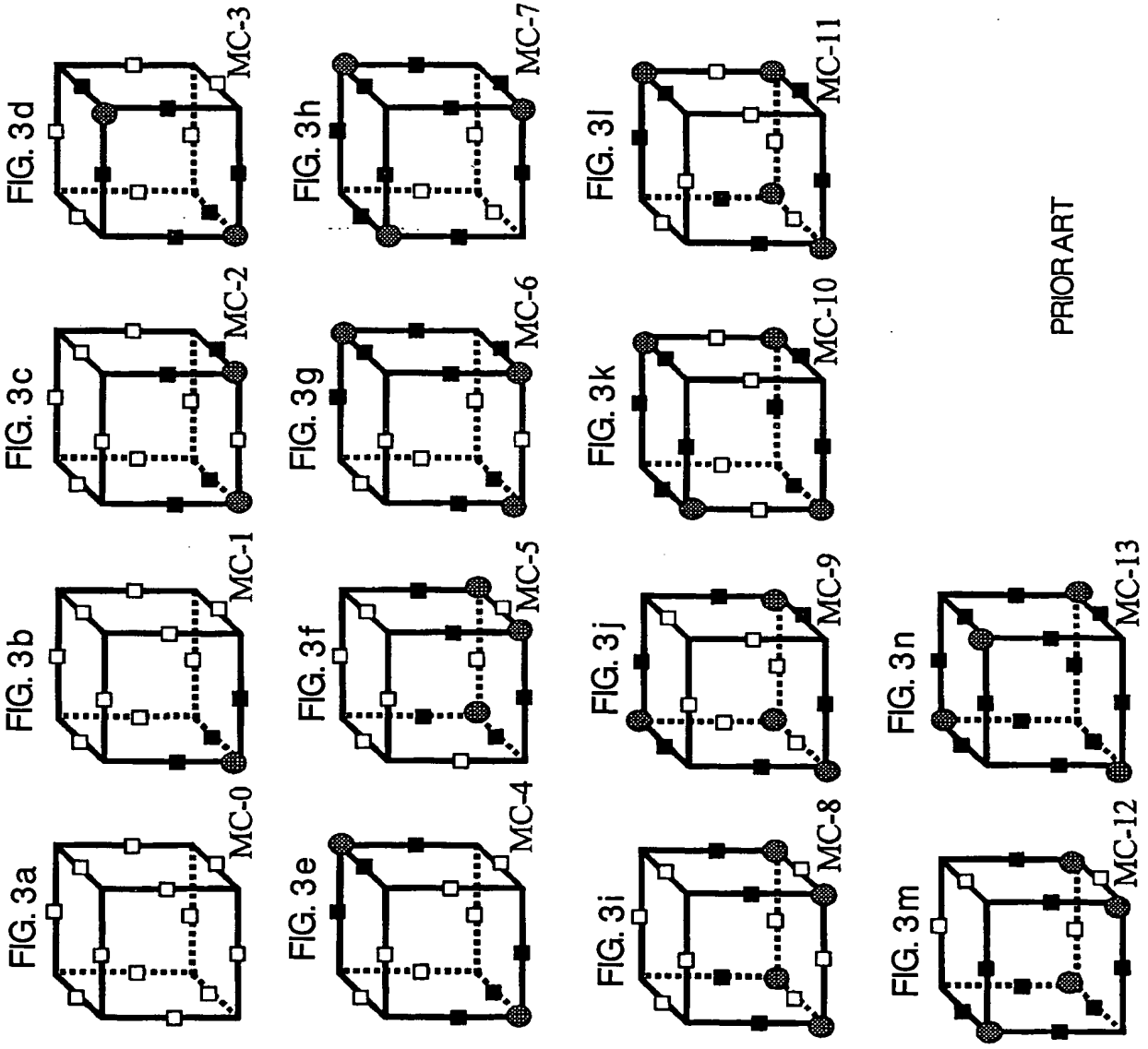


FIG. 3a
MC-0
FIG. 3b
MC-1
FIG. 3c
MC-2
FIG. 3d
MC-3
FIG. 3e
MC-4
FIG. 3f
MC-5
FIG. 3g
MC-6
FIG. 3h
MC-7
FIG. 3i
MC-8
FIG. 3j
MC-9
FIG. 3k
MC-10
FIG. 3l
MC-11
FIG. 3m
MC-12
FIG. 3n
MC-13

PRIOR ART

FIG. 4a

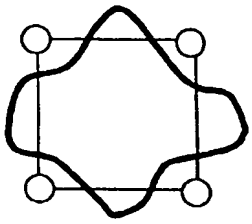


FIG. 4b

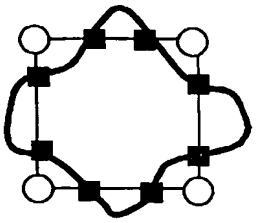
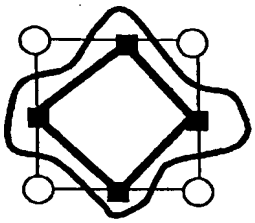


FIG. 4c



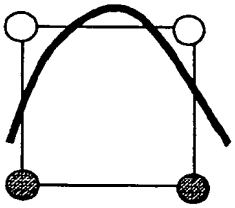


FIG. 4d

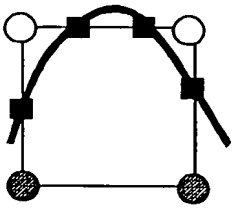


FIG. 4e

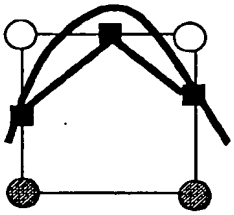


FIG. 4f

2D-KTC

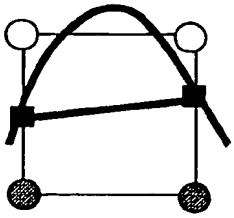
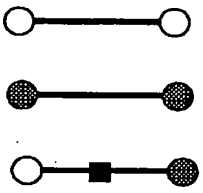


FIG. 4g

2D-MC

FIG. 5a
PRIOR ART

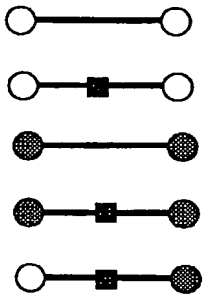


(MC)

NARROW-SENSE

CONDITION THAT NUMBER
OF CUTTING POINTS ON
ONE EDGE IS AT MOST ONE

FIG. 5b



(KTC)

BROAD-SENSE

CONDITION THAT NUMBER
OF CUTTING POINTS ON
ONE EDGE IS AT MOST ONE

FIG. 6

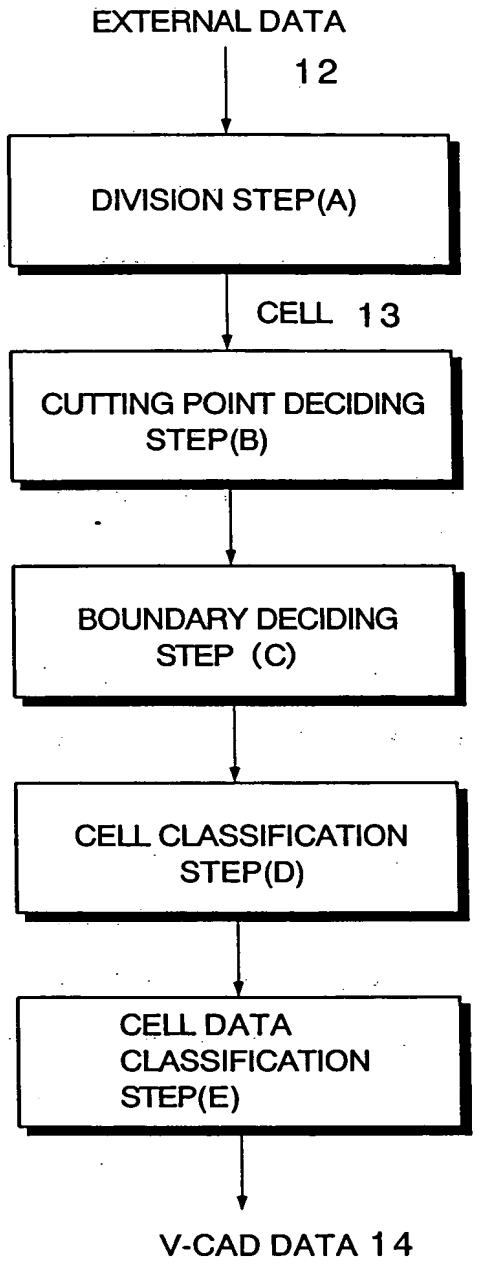

EXTERNAL DATA
12
DIVISION STEP(A)
CELL 13
CUTTING POINT DECIDING STEP(B)
BOUNDARY DECIDING STEP (C)
CELL CLASSIFICATION STEP(D)
CELL DATA CLASSIFICATION STEP(E)
V-CAD DATA 14

FIG. 7a

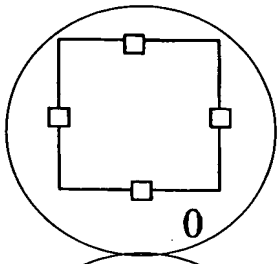


FIG. 7b

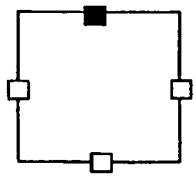
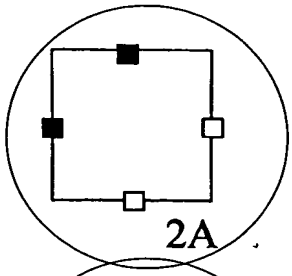


FIG. 7c



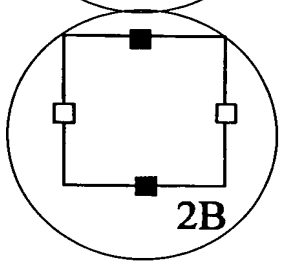


FIG. 7d

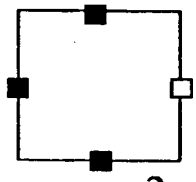


FIG. 7e

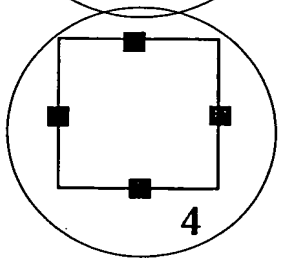


FIG. 7f

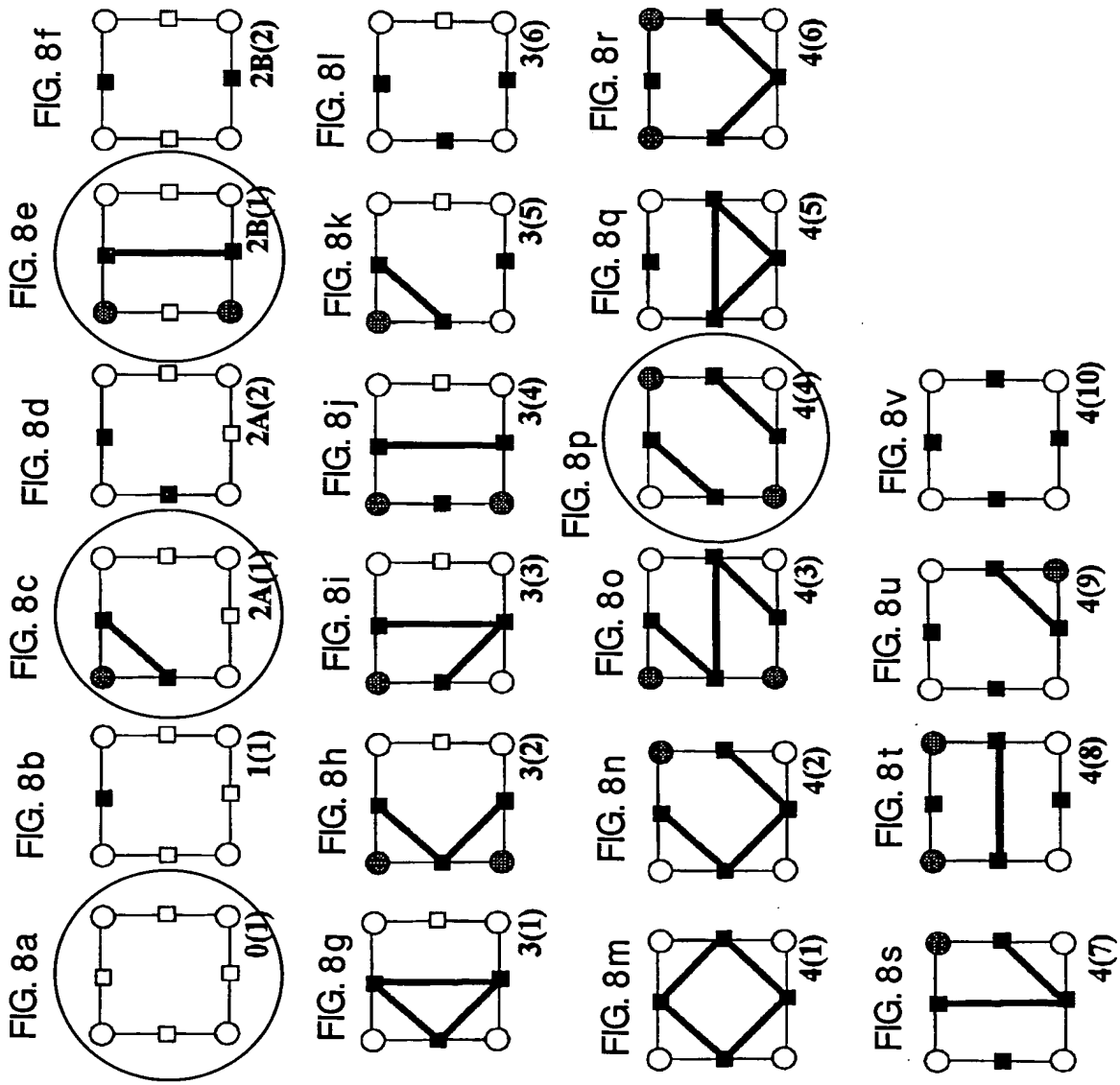
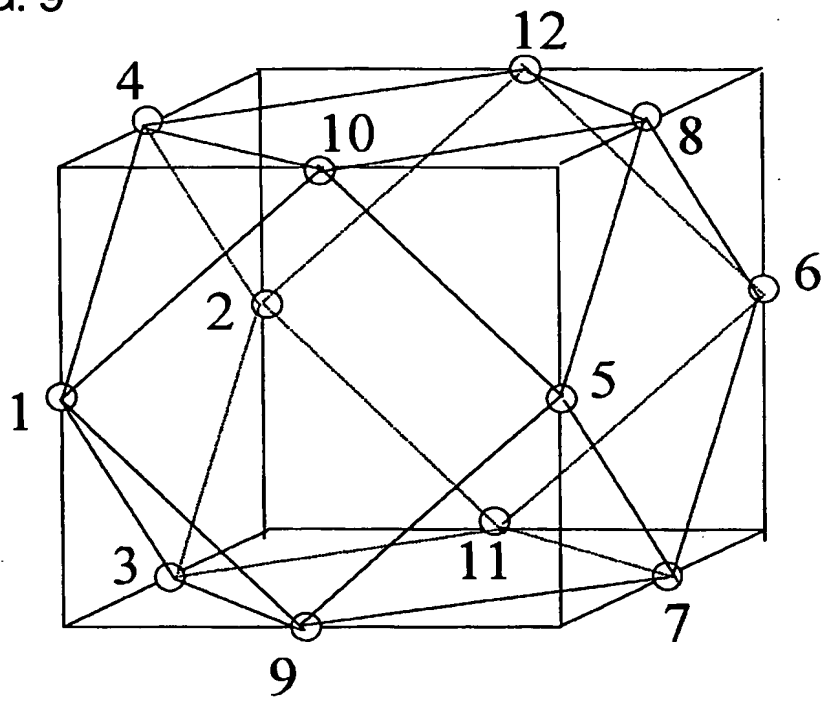


FIG. 8a
0(1)
FIG. 8b
1(1)
FIG. 8c
2A(1)
FIG. 8d
2A(2)
FIG. 8e
2B(1)
FIG. 8f
2B(2)
FIG. 8g
3(1)
FIG. 8h
3(2)
FIG. 8i
3(3)
FIG. 8j
3(4)
FIG. 8k
3(5)
FIG. 8l
3(6)
FIG. 8m
4(1)
FIG. 8n
4(2)
FIG. 8o
4(3)
FIG. 8p
4(4)
FIG. 8q
4(5)
FIG. 8r
4(6)
FIG. 8s
4(7)
FIG. 8t
4(8)
FIG. 8u
4(9)
FIG. 8v
4(10)

FIG. 9



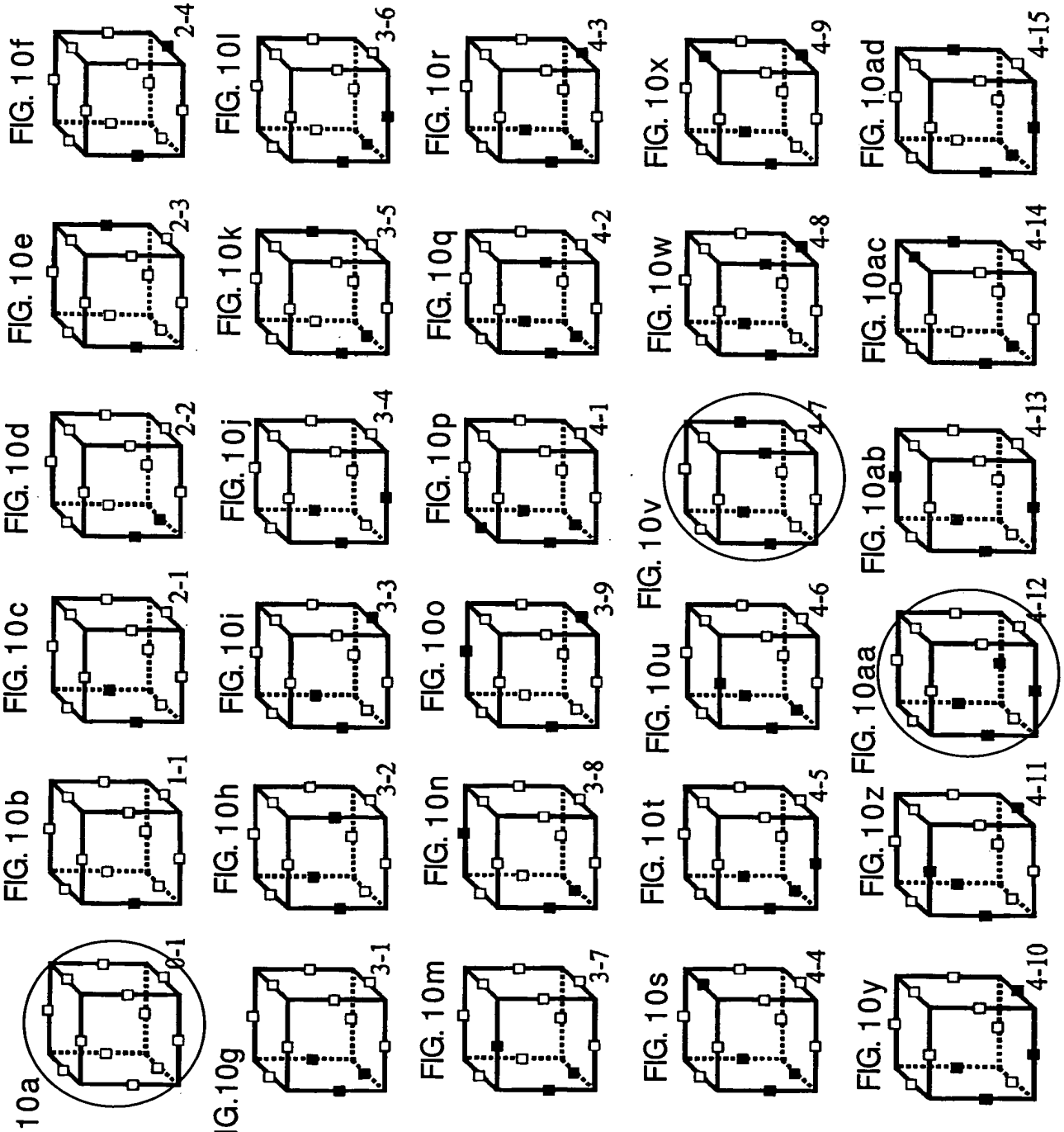


FIG. 10a
8-1
FIG. 10b
1-1
FIG. 10c
2-1
FIG. 10d
2-2
FIG. 10e
2-3
FIG. 10f
2-4
FIG.10g
3-1
FIG. 10h
3-2
FIG. 10i
3-3
FIG. 10j
3-4
FIG. 10k
3-5
FIG. 10l
3-6
FIG. 10m
3-7
FIG. 10n
3-8
FIG. 10o
3-9
FIG. 10p
4-1
FIG. 10q
4-2
FIG. 10r
4-3
FIG. 10s
4-4
FIG. 10t
4-5
FIG. 10u
4-6
FIG. 10v
4-7
FIG. 10w
4-8
FIG. 10x
4-9
FIG. 10y
4-10
FIG. 10z
4-11
FIG. 10aa
4-12
FIG. 10ab
4-13
FIG. 10ac
4-14
FIG. 10ad
4-15

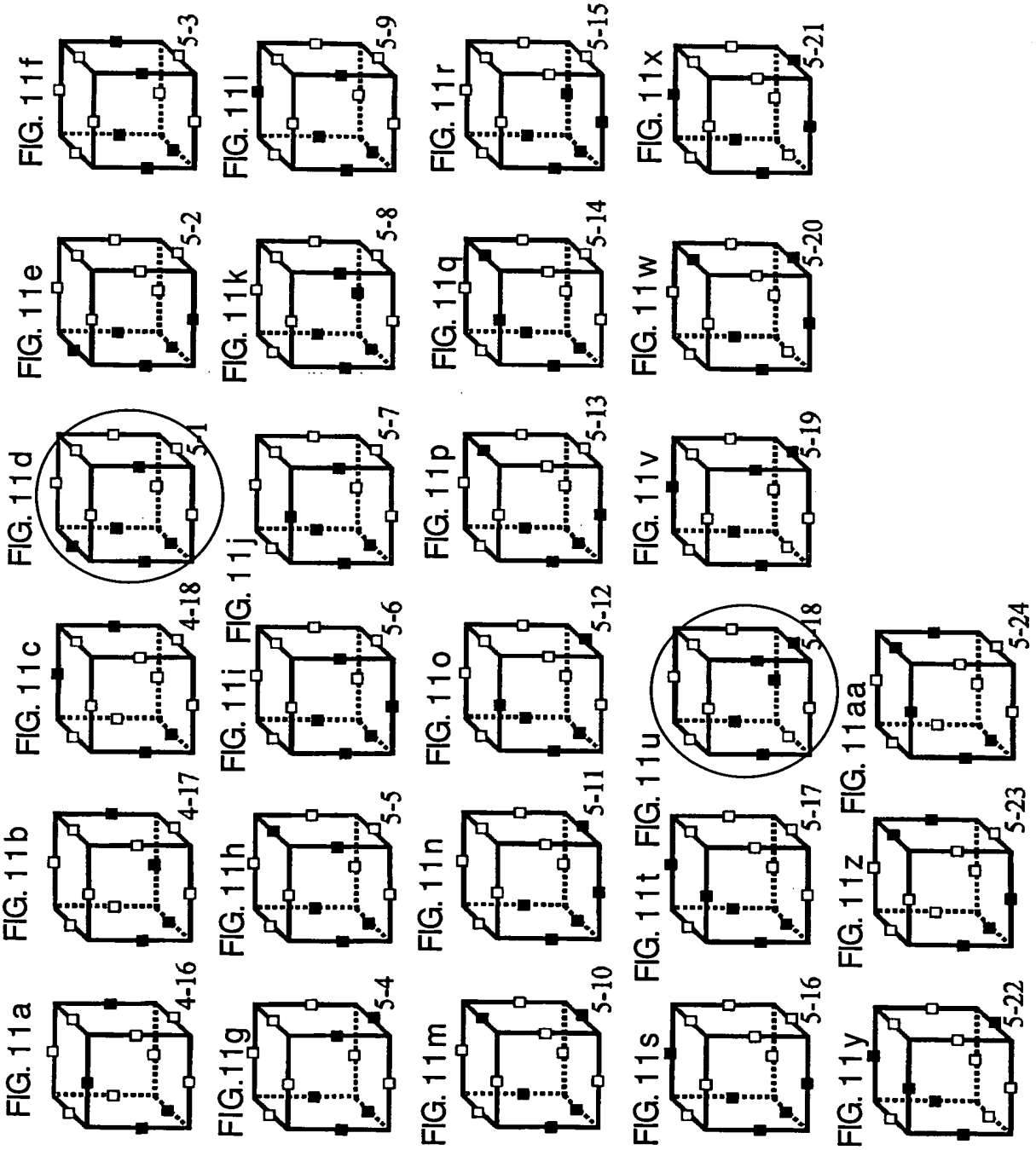


FIG. 11a
4-16
FIG. 11b
4-17
FIG. 11c
4-18
FIG. 11d
5-1
FIG. 11e
5-2
FIG. 11f
5-3
FIG.11g
5-4
FIG. 11h
5-5
FIG. 11i
5-6
FIG. 11j
5-7
FIG. 11k
5-8
FIG. 11l
5-9
FIG. 11m
5-10
FIG. 11n
5-11
FIG. 11o
5-12
FIG. 11p
5-13
FIG. 11q
5-14
FIG. 11r
5-15
FIG. 11s
5-16
FIG. 11t
5-17
FIG. 11u
5-18
FIG. 11v
5-19
FIG. 11w
5-20
FIG. 11x
5-21
FIG. 11y
5-22
FIG. 11z
5-23
FIG. 11aa
5-24

FIG. 12a

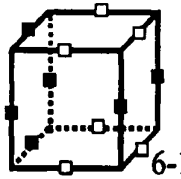


FIG. 12b

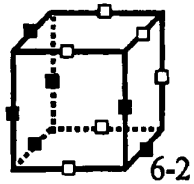


FIG. 12c

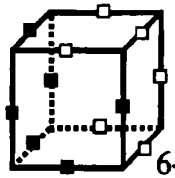


FIG. 12d

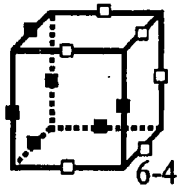


FIG. 12e

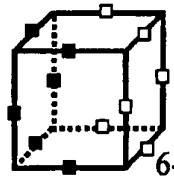


FIG. 12f

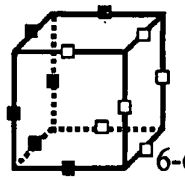


FIG.12g

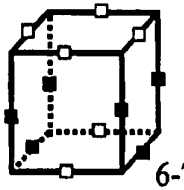


FIG. 12h

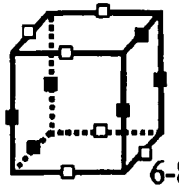


FIG. 12i

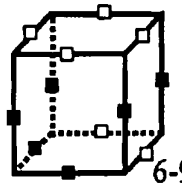


FIG. 12j

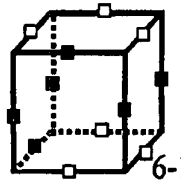


FIG. 12k

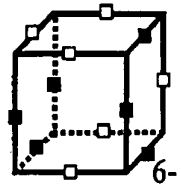


FIG. 12l

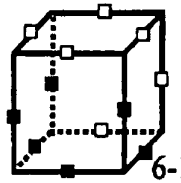


FIG. 12m

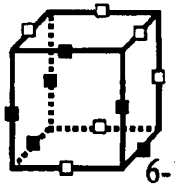


FIG. 12n

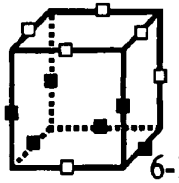


FIG. 12o

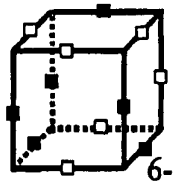


FIG. 12p

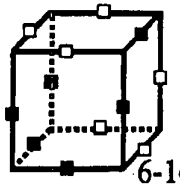


FIG. 12q

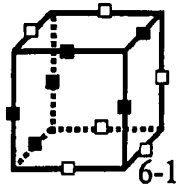


FIG. 12r

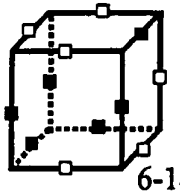


FIG. 12s

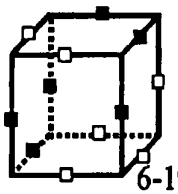


FIG. 12t

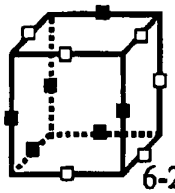


FIG. 12u

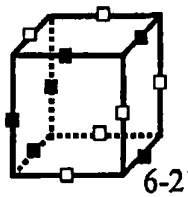


FIG. 12v

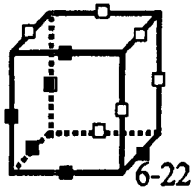


FIG. 12w

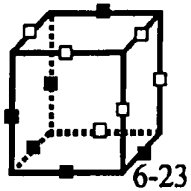


FIG. 12x

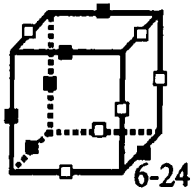


FIG. 12y

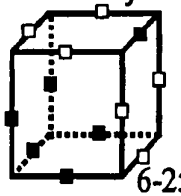


FIG. 12z

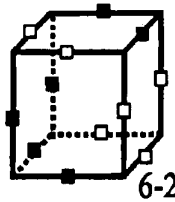


FIG. 12aa

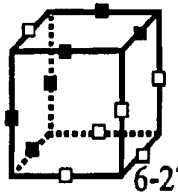


FIG. 12ab

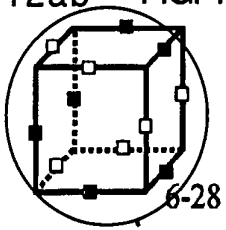


FIG. 12ac

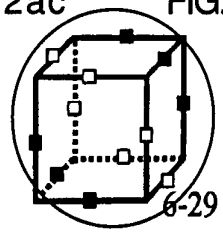


FIG. 12ad

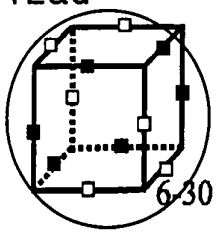


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FIG. 13

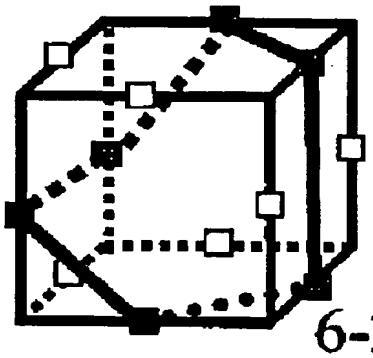
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FIG. 14

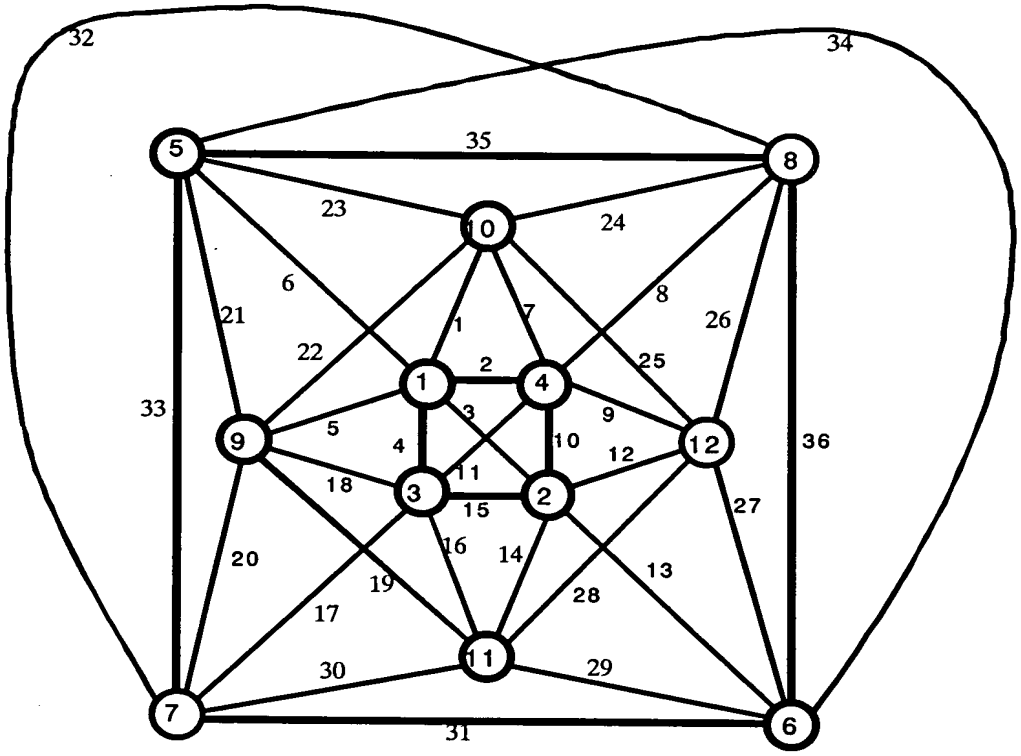
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FIG. 15

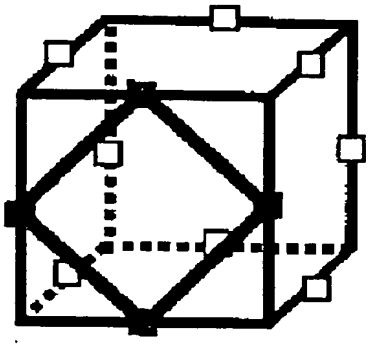


FIG. 16a

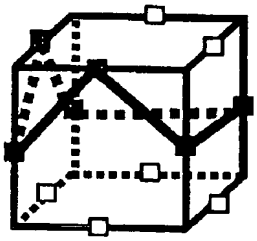


FIG. 16b

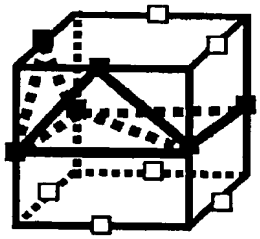
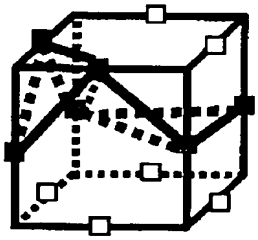


FIG. 16c



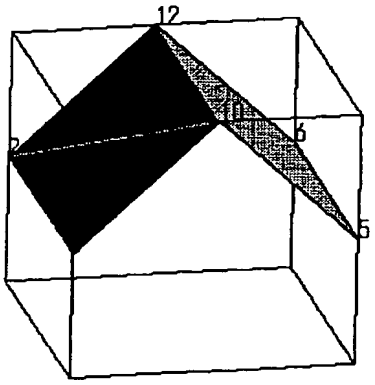


FIG. 16d

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FIG. 17

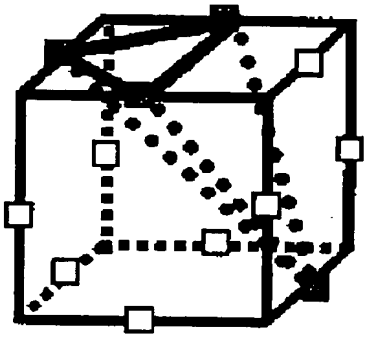


FIG. 18a

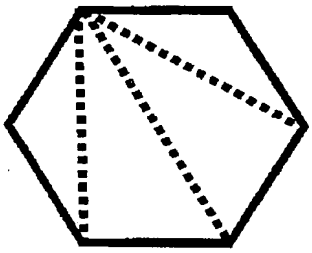


FIG. 18b

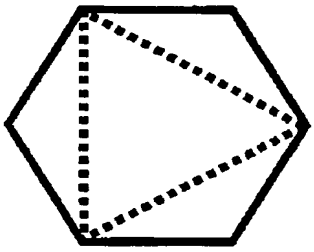


FIG. 18c

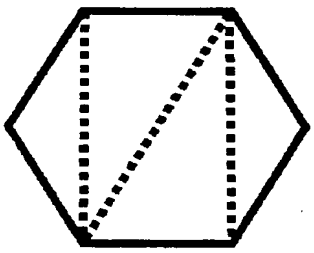


FIG. 19a

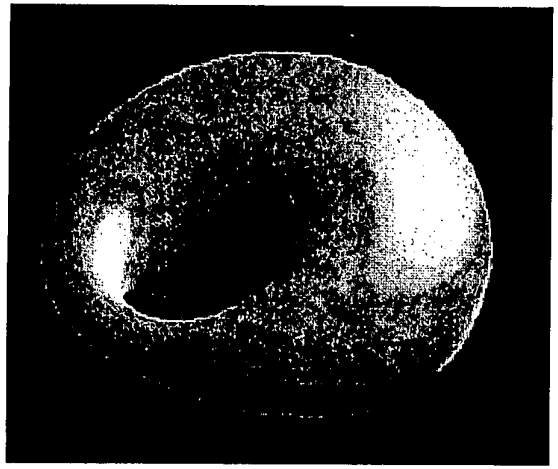


FIG. 19b

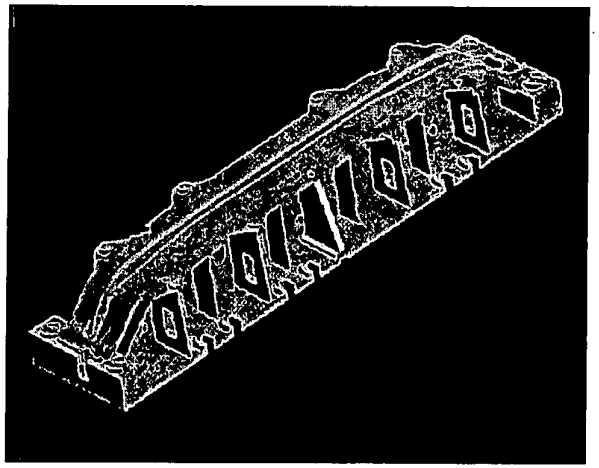


FIG. 19c

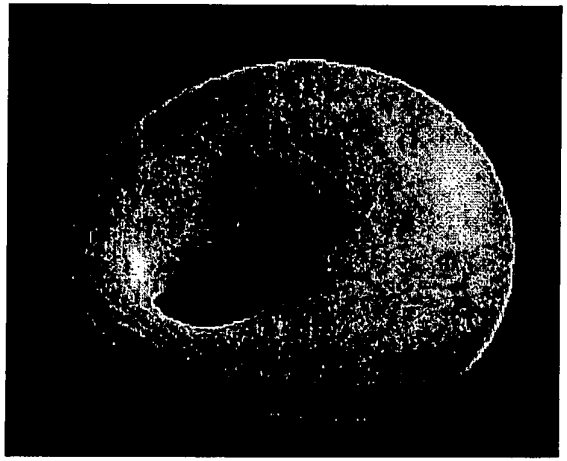
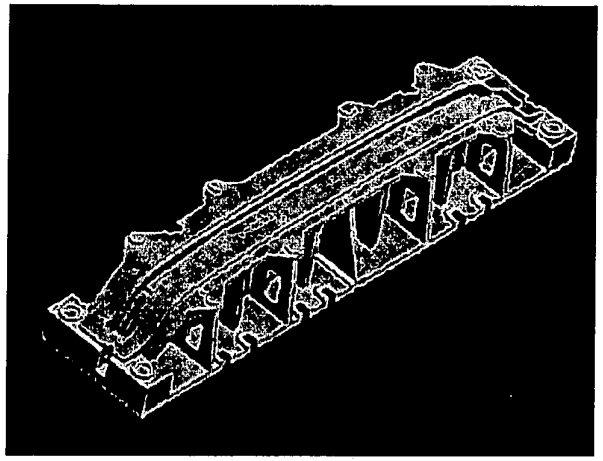


FIG. 19d



Reconstruction using partitions of the closed loop type.
B-rep data: (a)A cyclide surface, (b) A die from TSUBAMEX .
Reconstructions with partitions inside (c)64*64*64 cells and (d)512*512*512 cells.

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